



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

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24724  
Dirk Kempthorne, Governor  
C. Stephen Allred, Director

January 24, 2002

Mr. Pete Dirkmaat  
U.S. Department of Energy  
Idaho Operations Office  
785 DOE Place  
Idaho Falls, Idaho 83401-1562

Subject: Pit 9 Conceptual Design Comments

Dear Mr. Dirkmaat:

This letter transmits DEQ comments on the 10% Conceptual Design for the Glovebox Excavator Method which was received by DEQ on January 15, 2002. DEQ reviewed the Technical and Functional Requirements and Conceptual Design Report and Appendixes for Critical Decision 1. In addition to this review period DEQ met with DOE and EPA on December 18 and 19, 2001 to discuss the draft version of this design document with DOE.

We look forward to working with you to resolve these comments. Please contact me at (208) 373-0285 should you have any questions.

Sincerely,

A handwritten signature in cursive script, reading "Dean Nygard", is positioned above the typed name.

Dean Nygard  
Remediation Program Manager  
Waste Management & Remediation Division

DN:tg c:\...\daryl\pit 9 transmittal letter.doc

cc: Wayne Pierre, EPA-Region 10  
Daryl Koch, DEQ-WMRD  
Mark Clough, DEQ-Technical Services  
Kathleen Hain, DOE

attachment

**IDEQ COMMENTS (January 24, 2002): OU 7 – 10 GLOVEBOX EXCAVATOR  
METHOD PROJECT CONCEPTUAL DESIGN REPORT FOR CRITICAL DECISION 1**

1. **General Comment:** A public address (PA) system should be installed in the RCS and WES. This inexpensive system would enhance general operations and significantly assist in casualty control efforts.
2. **General Comment:** Video recording of the waste excavation process must be considered. Information from these recordings would prove invaluable to future remediation efforts, and would significantly improve waste origination point determinations if desired. Video camera use for excavator operations is already included in the project design, therefore recording of the excavation would be an extremely minor expense relative to project cost. These recordings could be edited as needed to remove any inclusion of classified information.
3. **General Comment:** Please add more detail to the project schedule.
4. **Conceptual Design Report, "Overburden Removal Highlights", Section 3.1.1, Page 3-5:** Bullet 2 indicates that the soil will be packaged in 4 x 4-ft soil sacks. Please revise this statement to read 4 x 4 x 4-ft soil sacks.
5. **Conceptual Design Report, Section 3.1.2, Page 3-7:** The first paragraph after Figure 3-4 states "...discharges a fine water mist before to excavation.". Please revise this to read "...discharges a fine water mist before excavation.".
6. **Conceptual Design Report, Section 3.1.2, Page 3-7:** Bulleted item 2 states that outlier items will be bagged out of the PGS and possibly returned to the excavation pit. Consideration should be made to developing a process whereby such items can be placed back on the transfer cart and returned to the excavator bucket for direct return to the pit. Bagging out such items, then transferring them back into the RCS seems inefficient. Possible solutions include modifying the transfer cart to allow dumping items back into the excavator bucket, or perhaps the use of a simple metal slide to return materials to the pit directly.
7. **Conceptual Design Report, Section 3.1.2, Page 3-7:** Bulleted item 3 states "Unidentifiable combustible material is segregated to verify fissile content prior to packaging.". Items such as HEPA filters may well be identifiable, and are considered to potentially contain plutonium. Please revise this statement to read "Unidentifiable combustible material, and material suspected of containing fissile elements, is segregated to verify fissile content prior to packaging.". This is a global comment, and applies to all such statements throughout this submittal (including Process Logic Diagrams).
8. **Conceptual Design Report, Section 3.1.3, Table 3-2, Page 3-11:** Redox potential testing to ascertain oxidizing or reducing conditions in the underburden would be beneficial to understanding the potential oxidation state and thus transport properties of actinide COCs. The probes that were to be installed in other areas of the SDA apparently could not fulfill this purpose. However, as normal redox testing would involve the placement of an in-situ probe, which will not occur in this underburden sampling, we encourage DOE to explore

other known test methods to obtain redox potential on these ex-situ samples.

9. **Conceptual Design Report, Section 3.5.6, Page 3-49:** The first full sentence on this page states "The bottom half of the stub is placed in the drum, the drum lid is attached, and the drum is removed from the loading station." Please revise to include that the drum is verified free of contamination prior to removal from the loading station in this sentence.
10. **Conceptual Design Report, Section 3.6.1, Page 3-49:** The second to last paragraph on this page raises the subject of high humidity during certain atmospheric conditions. High humidity is known to cause problems with HEPA filter operation and efficiency. What precautions have been implemented to preclude this condition?
11. **Conceptual Design Report, Section 3.6.1, Page 3-49:** The second to last paragraph on this page states that no inlet air preheating will be included. In the event of winter operations, glove box (PGS) temperature will be entirely controlled by the temperature of the outside ambient air. Since manual dexterity is of paramount importance for material handling in the PGS, inlet air preheating should be utilized. It is worthy of note that personnel will be using resizing tools and handling potentially sharp edged metal debris in the PGS.
12. **Conceptual Design Report, Section 3.6.1, Page 3-50:** Figure 3-36 indicates that the four RCS air inlets include HEPA filters. Please also indicate on this figure that the RCS air outlet is also HEPA filtered.
13. **Conceptual Design Report, Section 3.6.1, Page 3-51:** The first sentence on this page states that "The heat required for freeze protection is more than that required for comfort heating, thus, freeze protection is not provided by the heating system." It appears that the word "more" should be replaced by the word "less" in this sentence. Please clarify.
14. **Appendix B, Data Quality Objectives, Table B-2, DQO Reference Number QW7, Page B-31:** This DQO appears to have been deleted, but has no stated "Reason for Modification" given in the table. Please clarify.
15. **Appendix B, Data Quality Objectives, Table B-2, DQO Reference Number QP3, Page B-37:** This DQO appears to have been deleted, but has no stated "Reason for Modification" given in the table. Please clarify.
16. **Appendix C, Conceptual Design Drawings, Sheet C-2, "Improved Enlarged Site Plan":** This sheet includes the outline and call out label for the previous phase II design 20 x 20 foot excavation area. This information is not needed on this sheet. Please revise.
17. **Appendix C, Conceptual Design Drawings, Sheet A-8, "Excavator Plan and Sections":** The plan view on the right half of this sheet appears to be missing the "Alternate Position for Excavator", the "Excavator Arm and Bucket", and the Equipment Change Area" depictions. Also, the Equipment Change Area call-out includes the word "Equipment"

twice. Please revise.

18. **Appendix C, Conceptual Design Drawings, Sheet P-2, "Dust Suppression System Isometric":** The fog nozzle placement appears to interfere with excavator bucket operation during the phase where the bucket dumps waste into the PGS cart. If so, please modify the design. Also, consideration for utilizing a device for preventing damage to the nozzles from inadvertent contact with the excavator bucket should be addressed. Options include a simple metal bracket/bar device in close proximity to the nozzles.